

AMENDMENT UNDER 37 C.F.R. § 1.111  
U.S. APPLN. NO. 09/729,177  
ATTORNEY DOCKET NO. Q61789

**REMARKS**

Applicants request that the Examiner acknowledge Applicants' claim to foreign priority, and for indicating that the certified copy of the priority document, European Patent Application No. 99403062.5 dated December 6, 1999, has been made of record in the file.

Applicants thank the Examiner for initialing the references listed on the PTO-1449 form submitted with the Information Disclosure Statement filed on December 5, 2000, thereby confirming that the listed references have been considered.

Claims 1-15 have been examined on their merits.

Applicants herein editorially amend claims 1-15 to remove reference callouts and conform the claims to U.S. practice. No new matter has been added. Entry and consideration of the amendments to claims 1-15 is respectfully requested.

Applicants herein amend claims 11 and 12 to recite "transmission paths" instead of "TX paths." No new matter has been added. Entry and consideration of the amendments to claims 11 and 12 is respectfully requested.

Applicants herein amend claim 1 to recite that the transmission return loss gain is measured and provides the basis for digitally controlling the tunable elements of a hybrid. Applicants herein amend claim 6 to recite that a digital control means tunes the tunable passive impedances are tuned based on the transmission return loss gain of a hybrid portion of an analog front end. No new matter has been added. Entry and consideration of the amendments to claims 1 and 6 is respectfully requested.

Claims 1-15 are all the claims presently pending in the application.

1. Claims 1-3, 6 and 7 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Amrany *et al.* (U.S. Patent No. 6,281,829) in view of Hewinson *et al.* (U.S. Patent No. 6,288,883). Applicants traverse the rejection of claims 1-3, 6 and 7 at least for the reasons set forth below.

The initial burden of establishing that a claimed invention is *prima facie* obvious rests on the USPTO. *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984). To make its *prima facie* case of obviousness, the USPTO must satisfy three requirements:

1. The prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated to artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988).
2. The proposed modification of the prior art must have had a reasonable expectation of success, and that determined from the vantage point of the artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209 (Fed. Cir. 1991).
3. The prior art reference or combination of references must teach or suggest all the limitations of the claims. *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991); *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970).

The motivation, suggestion or teaching may come explicitly from statements in the prior art, the knowledge of one of ordinary skill in the art, or, the nature of a problem to be solved. *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). Alternatively, the motivation may be implicit from

the prior art as a whole, rather than expressly stated. *Id.* Regardless if the USPTO relies on an express or an implicit showing of motivation, the USPTO is obligated to provide particular findings related to its conclusion, and those findings must be clear and particular. *Id.* A broad conclusionary statement, standing alone without support, is not “evidence.” *Id.*; *see also, In re Zurko*, 258 F.3d 1379, 1386 (Fed. Cir. 2001).

In addition, a rejection cannot be predicated on the mere identification of individual components of claimed limitations. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000). Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *Id.*

The Examiner acknowledges that Amrany *et al.* does not disclose adaptive echo canceling with tunable passive elements. *See* page 2 of the June 19, 2003 Non-Final Office Action. The Examiner alleges that the disclosure of Hewinson *et al.* overcomes the acknowledged deficiencies of Amrany *et al.*

With respect to claim 1, the combination of Amrany *et al.* and Hewinson *et al.* fails to teach or suggest a method of adaptive echo canceling, wherein tunable passive elements in a hybrid are tuned via a digital means in order to reduce the transmission return loss gain. Amrany *et al.* does not even contemplate digital control of tunable passive elements in a hybrid, as the Examiner has acknowledged that Amrany *et al.* fails to teach or suggest such elements. *See* page 2 of the June 19, 2003 Non-Final Office Action. In Amrany *et al.*, a digital signal processor (DSP) is used to “subtract the remains of the transmit-signal in the digital domain” and DSPs are used to input and

receive digital signals that are external to the analog front end (100). Hewinson *et al.* disclose tunable passive elements that are tuned by a current control device (CC) based on a pair of integrated signals representing in-phase and quadrature signal components. There is no disclosure in Hewinson *et al.* of using a digital control means to control the tunable passive elements. The combination of Amrany *et al.* and Hewinson *et al.* has no teaching or suggestion of a digital control means that sets the values for tunable passive elements in a hybrid, where the passive elements are tuned to reduce the transmission return loss gain. Thus, Applicants submit that the Examiner cannot fulfill the “all limitations” prong of a *prima facie* case of obviousness, as required by *In re Vaeck*.

Since neither Amrany *et al.* nor Hewinson *et al.* disclose a digital control means that sets the values for tunable passive elements in a hybrid, Applicants believe that one of skill in the art would not be motivated to combine the two references. *In re Dembiczak* and *In re Zurko* require the Examiner to provide particularized facts on the record as to why one of skill would be motivated to combine the two references. Without a motivation to combine, a rejection based on a *prima facie* case of obviousness is improper. *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998)). The level of skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int’l Inc.*, 174 F.3d 1308 (Fed. Cir. 1999). The Examiner must make specific factual findings with respect to the motivation to combine references. *In re Lee*, 277 F.3d 1338, 1342-44 (Fed. Cir. 2002). Although the Examiner claims that improved performance and cost is the motivation for combining the two references, both Amrany *et al.* and Hewinson *et al.* lack any teaching about the desirability of a digital control means that sets the values for tunable passive elements in a hybrid. Since Amrany *et al.* barely discusses echo cancellation, why would one of

ordinary skill in the art add the transconductance bridge of Hewinson *et al.*, with all the attendant extra components and circuit complexity, to the circuit of Amrany *et al.*? Applicants submit that the Examiner cannot fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Based on the foregoing reasons, Applicants believe that the combination of Amrany *et al.* and Hewinson *et al.* fails to disclose all of the claimed elements as arranged in claim 1, and included via dependency in claims 2 and 3. Therefore, the combination of AAPA and Kimura clearly cannot render the present invention obvious as recited in claims 2 and 3. Thus, Applicants believe that claim 1 is allowable, and further believe that claims 2 and 3 are allowable as well, at least by virtue of their dependency from claim 1. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 1-3.

Independent claim 6 has similar recitations as independent claim 1, namely, a hybrid bridge comprising tunable passive elements that are tuned by a digital control means in order to reduce transmission return loss gain. Applicants believe that claim 6 is allowable for at least the same reasons as claim 1, in that the combination of Amrany *et al.* and Hewinson *et al.* fails to teach or suggest the digital control means for the tunable passive impedances. Applicants further believe that claim 7 is allowable as well, at least by virtue of its dependency from claim 6. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 6 and 7.

2. Claims 4, 5, 8, 14 and 15 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Amrany *et al.* in view of Hewinson *et al.* and in further view of Kakuishi (U.S. Patent No. 5,287,406). Applicants traverse the rejection of claims 4, 5, 8, 14 and 15 at least for the reasons set forth below.

The Examiner acknowledges that Amrany *et al.* does not disclose adaptive echo canceling with tunable passive elements. *See* page 2 of the June 19, 2003 Non-Final Office Action. The Examiner further acknowledges that the combination of Amrany *et al.* and Hewinson *et al.* do not teach or suggest a hybrid bridge comprising tunable passive impedances having a tunable balance impedance, wherein the value of the tunable balance impedance approximates a scaled impedance value of a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. *See* page 4 of the June 19, 2003 Non-Final Office Action. The Examiner alleges that Kakuishi supplies the necessary disclosure to overcome the acknowledged deficiencies of combination of Amrany *et al.* and Hewinson *et al.* Kakuishi discloses, *inter alia*, using an adder circuit to cancel a return echo. *See* col. 3, lines 30-31 of Kakuishi.

With respect to claim 4, the combination of Amrany *et al.*, Hewinson *et al.* and Kakuishi fail to teach or suggest a hybrid bridge comprising tunable passive impedances having a tunable balance impedance, wherein the value of the tunable balance impedance approximates a scaled impedance value of a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. As noted above, the Examiner has acknowledged that Amrany *et al.* and Hewinson *et al.* fail to teach or suggest the recitations of claim 4, which incorporates all the recitations of claim 1. Therefore, the Examiner must rely upon Kakuishi to supply the necessary

disclosure. However, combining Kakuishi with Amrany *et al.* and Hewinson *et al.* still fails to teach or suggest the invention recited in claim 4 since none of the references teach or suggest setting the value of a tunable balance impedance to approximate a scaled impedance in a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. While Kakuishi discloses a formula related to line impedances, the Examiner has not pointed to any teaching or suggestion in Kakuishi, Amrany *et al.* or Hewinson *et al.* that discloses a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance. Moreover, the Examiner has not pointed to any teaching or suggestion in Kakuishi, Amrany *et al.* or Hewinson *et al.* that discloses the setting the value of a tunable balance impedance to approximate a scaled impedance in the aforementioned parallel circuit. Finally, the combination of Kakuishi, Amrany *et al.* and Hewinson *et al.* does not disclose a digital control means for controlling the tunable passive elements of a hybrid. Thus, Applicants believe that the Examiner cannot fulfill the “all limitations” prong of a *prima facie* case of obviousness, as required by *In re Vaeck*.

Since neither Kakuishi, Amrany *et al.* nor Hewinson *et al.* disclose a tunable balance impedance to approximate a scaled impedance in a parallel circuit comprising the line termination resistance in transmission paths of the hybrid bridge and a line impedance, Applicants believe that one of skill in the art would not be motivated to combine the three references. Although the Examiner provides a motivation analysis with respect to manufacturing a lower-cost hybrid bridge circuit, Kakuishi, Amrany *et al.* nor Hewinson *et al.* lack any teaching about the desirability of a tunable balance impedance to approximate a scaled impedance in a parallel circuit comprising the

line termination resistance in transmission paths of the hybrid bridge and a line impedance. Thus, Applicants believe that the Examiner cannot fulfill the motivation prong of a *prima facie* case of obviousness, as required by *In re Dembiczak* and *In re Zurko*.

Based on the foregoing reasons, Applicants believe that the combination of Kakuishi, Amrany *et al.* and Hewinson *et al.* fails to disclose all of the claimed elements as arranged in claim 4. Therefore, the combination of Kakuishi, Amrany *et al.* and Hewinson *et al.* clearly cannot render the present invention obvious as recited in claim 4. Thus, Applicants believe that claim 4 is in condition for allowance, and further believe that claim 5 is allowable as well, at least by virtue of its dependency from claim 4. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 4 and 5.

Claims 8, 14 and 15 depend from claim 6, and therefore incorporate all the recitations of claim 6 by virtue of their dependency.

The combination of Kakuishi, Amrany *et al.* and Hewinson *et al.* does not teach or suggest all of the claimed elements as arranged in claim 1, and included in claims 8, 14 and 15 via dependency. Specifically, the combination fails to disclose a digital control means for controlling the tunable passive elements of a hybrid, as Kakuishi contains no teaching or suggestion on controlling the tunable passive elements with a digital control means. See the above discussion with respect to claim 6. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 8, 14 and 15.



3. Claims 9-13 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Amrany *et al.* in view of Hewinson *et al.*, and in further view of Kakuishi and McGinn (U.S. Patent No. 5,333,192). Applicants traverse the rejection of claims 9-13 at least for the reasons set forth below.

The Examiner acknowledges that the combination of Amrany *et al.*, Hewinson *et al.* and Kakuishi do not teach or suggest a hybrid bridge having two branches that are identical. *See* page 6 of the June 19, 2003 Non-Final Office Action. The Examiner alleges that McGinn supplies the necessary disclosure to overcome the acknowledged deficiencies of Amrany *et al.*, Hewinson *et al.* and Kakuishi. McGinn discloses, *inter alia*, using a resistor bridge having identical branches. *See, e.g.*, Figure 2 of McGinn. Applicants note that McGinn was not cited for any teaching of parallel circuits, tunable passive elements or line termination resistances.

Claims 9-13 depend from claim 6, and therefore incorporate all the recitations of claim 6 by virtue of their dependency.

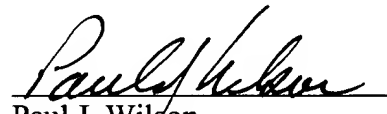
The combination of Kakuishi, Amrany *et al.*, Hewinson *et al.* and McGinn does not teach or suggest all of the claimed elements as arranged in claim 1, and included in claims 9-13 via dependency. Specifically, the combination fails to disclose a digital control means for controlling the tunable passive elements of a hybrid, as McGinn contains no teaching or suggestion on controlling the tunable passive elements with a digital control means. *See* the above discussion with respect to claim 6. Applicants respectfully request that the Examiner withdraw the § 103(a) rejection of claims 9-13.

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In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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